

Application No. 10/821,423
Amendment dated July 9, 2008
Reply to Office action of June 2, 2008

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS:

1. (Currently Amended) A method for navigation, comprising:
providing a first device including a triangulation positioning functionality;
providing a second device to communicate with the first device, but separate and independently operable from the first device, the second device including a dead reckoning positioning functionality; and
resolving a position of one of the first and the second devices, wherein resolving the position includes using the dead reckoning positioning functionality and the triangulation positioning functionality.

2. (Previously Presented) The method of claim 1, wherein the first device is a handheld multifunction device selected from a group of a Personal Digital Assistant (PDA) enabled device and a cell phone enabled device.

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3. (Previously Presented) The method of claim 2, wherein each of the group of a Personal Digital Assistant (PDA) enabled device and a cell phone enabled device includes providing a Personal Digital Assistant (PDA) enabled device and a cell phone enabled device has an integrated compass.

4. (Previously Presented) The method of claim 1, wherein providing the first device including a triangulation positioning functionality includes using a handheld GPS enabled device.

5. (Previously Presented) The method of claim 1, wherein providing the second device includes a rate gyro sensor.

6. (Previously Presented) The method of claim 5, wherein providing the second device includes an accelerometer sensor.

7. (Previously Presented) The method of claim 1, wherein providing the first and second devices includes providing first and second devices that communicate navigation related data between each other wirelessly using a communication technology selected from the group of infrared signaling, cellular technology, Bluetooth technology, and microwave technology.

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8. (Previously Presented) The method of claim 7, wherein providing a first device includes providing a first device having an integral display, and wherein the method further includes using the first device to display and to track a movement of one of the first and the second devices.

9. (Previously Presented) The method of claim 1, wherein the method further includes performing a route calculation using the first device.

10. (Currently Amended) A method for navigation, comprising:

providing a first mobile device including a triangulation positioning functionality;

providing a second mobile device to communicate with the first mobile device and physically separable and independently operable therefrom, the second mobile device including a dead reckoning functionality that includes an orientation component and a distance detection component;

resolving the position of one of the first and the second mobile devices using the triangulation positioning functionality when the triangulation positioning functionality is available;

resolving the position of one of the first and the second mobile devices using the dead reckoning positioning functionality to complement resolving the position with the triangulation positioning functionality when the triangulation positioning functionality is interrupted; and

resolving the position of one of the first and the second mobile devices using the dead reckoning positioning functionality when the triangulation positioning functionality is unavailable.

11. (Previously Presented) The method of claim 10, wherein the method further includes using one of the triangulation positioning and dead reckoning positioning functionalities to calibrate the other one of the triangulation positioning and dead reckoning positioning functionalities.

12. (Previously Presented) The method of claim 10, wherein the method further includes retrieving navigation related data from a memory of the second mobile device and displaying the navigation related data on an integral display of the first mobile device.

13. (Previously Presented) The method of claim 12, wherein retrieving navigation related data from a memory of the first mobile device includes retrieving navigation related data selected from the group of a number of waypoints, a planned route, and points of interest.

14. (Original) The method of claim 13, wherein retrieving navigation related data for points of interest includes retrieving points of interest selected from the group of geographical points of interest, entertainment venues, dining venues, and lodging venues.

15. (Currently Amended) A method for navigation in a vehicle, comprising:
tracking a location of a first device using a triangulation positioning functionality; and
using a second device to communicate with the first mobile device, that is physically
separable and independently operable therefrom, and that includes a distance
determination component and an orientation component, to continue tracking the
location of one of the first and second devices.

16. (Previously Presented) The method of claim 15, wherein the method further includes operably coupling the first and the second devices to communicate with one another in a single vehicle.

17. (Previously Presented) The method of claim 15, wherein using a second navigation device to continue tracking the location includes using a handheld, portable second device, wherein the handheld, portable second device includes a cradle for the first device.

18. (Previously Presented) The method of claim 15, wherein using a second device to continue tracking the location includes communicatively coupling the first device to a dead reckoning positioning functionality in the vehicle, wherein the distance determination component includes at least one component selected from the group of an odometer and a speedometer, and wherein the orientation component includes at least one component selected from a differential wheel sensor, a rate gyro, and a compass.

19. (Previously Presented) The method of claim 15, wherein the method further includes software operable on the first and the second devices for selecting between using the first and the second devices.

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20. (Previously Presented) The method of claim 19, wherein selecting between using the first and the second devices includes resolving which of the first and the second devices is providing a better set of position data.

21. (Previously Presented) The method of claim 20, wherein resolving which of the first and the second devices is providing a better set of position data includes:

resolving whether the first device is receiving triangulation positioning signals;
resolving whether the second device is receiving triangulation positioning data; and
resolving whether either of the first and the second devices are producing dead reckoning position data.

22. (Previously Presented) The method of claim 21, wherein tracking the location includes tracking a location of the first and the second device along a planned route and providing visual and audio route guidance.

23. (Currently Amended) A navigation system, comprising:

a first mobile device including a dead reckoning positioning component;

a second mobile device removably situated in the first mobile device including a triangulation positioning functionality in communication with the first mobile device;

and

wherein the first and the second mobile devices resolve a position of one of the first and the second devices using the dead reckoning component of the first mobile device to supplement resolving the position with the triangulation positioning functionality in the second mobile device; and

wherein the second mobile device is independently operable from the first mobile device

when the second mobile device is removed from the first mobile device.

24. (Previously Presented) The navigation system of claim 23, wherein the dead reckoning component includes at least one component selected from a rate gyro and an accelerometer, and wherein the triangulation positioning functionality includes a GPS receiver.

25. (Previously Presented) The navigation system of claim 23, wherein the dead reckoning component includes at least one component selected from the group of an odometer, a speedometer, a differential wheel sensor communicatively coupled to at least one wheel of a vehicle, and a compass.

26. (Previously Presented) The navigation system of claim 23, wherein the first mobile device further includes a triangulation positioning functionality, and the second device further includes a dead reckoning positioning component.

27. (Previously Presented) The navigation system of claim 23, wherein the first mobile device includes a processor, a memory, and a set of computer executable instructions operable thereon to perform a route calculation.

28. (Previously Presented) The navigation system of claim 23, wherein the second mobile device is selected from the group of a multifunction PDA-enabled device and a multifunction cell phone-enabled device.

29. (Previously Presented) The navigation system of claim 23, wherein the second mobile device is removably, physically interfaced to the first mobile device.

30. (Previously Presented) The navigation system of claim 23, wherein the first and second mobile devices are wirelessly interfaced with one another.

31. (Currently Amended) A vehicle navigation system, comprising:

a first device having a processor, a memory, and a transceiver to communicate with one another, the first device including a positioning functionality;

a second device having a processor, a memory, and a transceiver to communicate with one another, the second device including a positioning functionality;

wherein the transceivers in the first and the second devices transmit navigation related data wirelessly between the first and the second devices; ~~and~~

wherein the first and the second devices cooperate to resolve a position of the first and the second devices; and

wherein the second device is removably separable and independently operable from the first mobile device.

32. (Previously Presented) The system of claim 31, wherein the positioning functionality in the first device includes a GPS functionality and the positioning functionality in the second device includes dead reckoning positioning functionality, including a distance determination sensor and an orientation sensor.

33. (Previously Presented) The system of claim 32, wherein the first and the second devices resolve the position using the GPS functionality while a GPS signal service is available to the first device, and wherein one of the first and the second devices resolve the position using the dead reckoning positioning functionality to supplement the GPS functionality when one of an interrupted, and unavailable GPS signal service is indicated by the first device.

34. (Previously Presented) The system of claim 31, wherein the first device includes a display operable to display the position and a route to a desired destination, and wherein the first device navigates the route to the desired destination using audio and visual guidance.

35. (Previously Presented) The system of claim 31, wherein the system further includes: a remote server having a processor, a memory, and a transceiver to communicate with at least one of the first and the second devices.

36. (Previously Presented) The system of claim 35, wherein the remote server processor responds to a request from at least one of the first and the second devices by performing calculations on the navigation related data and transmitting results to at least one of the first and the second devices.

37. (Previously Presented) A method for navigation in a vehicle, comprising:
tracking a location of a first device using a triangulation positioning functionality;
using a second device that communicates with the first device and includes a cradle for the
first device, a distance determination component, and an orientation component, to
continue tracking the location of one of the first and second devices; and
using software operable on the first and the second devices for selecting between using the
first and the second devices.

38. (Previously Presented) The method of claim 37, wherein selecting between using the
first and the second devices includes resolving which of the first and the second devices is providing
a better set of position data.

39. (Previously Presented) The method of claim 38, wherein resolving which of the first
and the second devices is providing a better set of position data includes:
resolving whether the first device is receiving triangulation positioning signals;
resolving whether the second device is receiving triangulation positioning data; and
resolving whether either of the first and the second devices are producing dead reckoning
position data.

40. (Previously Presented) The method of claim 39, wherein tracking the location includes tracking a location of the first and the second device along a planned route and providing visual and audio route guidance.

41. (Previously Presented) The method of claim 1, wherein the first device is housed in a first housing and the second device is housed in a second housing separable from the first housing.

42. (Previously Presented) The method of claim 1, wherein the second device is removably situated in the first device.

43. (Previously Presented) The method of claim 1, wherein the first device is removably situated in the second device.

44. (Previously Presented) The method of claim 1, wherein the second device provides a cradle for the first device.

45. (Previously Presented) The method of claim 1, wherein the first device provides a cradle for the second device.